



The Renovator

A Pentagon Renovation Program Newsletter



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IT'S FOR REAL! Wedge 1 Move-ins Begin February 2001

In April of 1942, the first employees to work in the Pentagon departed shuttle buses beyond what is now South Parking and walked on wooden planks over mud and rubble to arrive at the first completed offices in the Pentagon. On Feb. 22, 2001, nearly 59 years later, employees, in a very real sense, will enter the Pentagon again for the first time when they move into renovated areas of Wedge 1. "It is fair to say that employees will be entering a new office building," said Dave Westrick, Wedge 1 Project Manager for the Pentagon Renovation Program. "We literally brought the wedge down to its bare bones during the renovation process. Nothing remained from the original Pentagon except for the columns, floor slabs and external walls."

For three years during the demolition and reconstruction process, 20,000 employees in the Pentagon and 5,000 personnel relocated to offices outside the building have been only casually aware of renovation activities in Wedge 1. In fact, aside from the noise generated by construction activity, work inside Wedge 1 remained somewhat of a mystery to most people. Not any longer.

"Every employee in the Pentagon will make his or her way through Wedge 1 at some point in the next few weeks," said Lee Evey, Pentagon Renovation Program Manager. "It is our most significant milestone to date and marks the most visible part of the Pentagon Renovation Program. Wedge 1 directly affects the average Pentagon employee and it will be the activity by which they judge our Program," said Evey.

The first employees to make that judgement will be 100 Air Force personnel who will move into new

offices on the 5th floor in both the A- and B-rings. Ironically, Air Force personnel were the last to move into the Pentagon when the service was established in 1947, well after Pentagon offices were completely filled. Air Force employees were "accommodated" in the Pentagon's basement, an area not originally intended for human activity. In fact, before newly renovated space in the mezzanine was turned over in 1998, many Air Force offices in the basement were plagued by poor air circulation, leaky ceilings, and dark, dank conditions (and were often shared with rodents and other "critters"). The new offices that Air Force employees enter in February 2001 may give some the impression that they are not even in the Pentagon.

In fact, upon entering Wedge 1 in the A-ring from the Corridor 4 side, personnel may have to squint at first as they

are greeted by bright modern corridors, light colors and new terrazzo floors. Walking along the A-ring corridor, they will enjoy the views down to the Center Courtyard through new blast-resistant windows that improve physical security while replicating the historical features of the old units. As employees approach the apex of Corridors 3 and 4, curiosity will peak as a new escalator bank comes into view.

Nearing the escalator's glass balustrades, personnel will glimpse downward over the metallic railing, perhaps casually at first, not anticipating the dramatic view that awaits. Then, in an instant, eyes will



A view of the new escalator bank at the A-ring apex in Wedge 1.

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Wedge 1 opens in Feb. 2001

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widen as a five-floor overlook comes into view.

Continuing on toward B-ring office space off of Corridor 3 employees will first pass by modern restrooms that feature electronic sensors on all fixtures and provide full accessibility for persons with disabilities.

Just before reaching the B-ring, employees will notice two new passenger-only elevators, which they can use without fear of encountering one of the many electrical vehicles that crowd the Pentagon's corridors. When the wedge is completed later this summer, employees will enjoy the convenience of six additional elevators, three each at both Corridors 3 and 4 near the E-ring.

Upon reaching the B-ring, employees will notice that the corridor that bisects the ring no longer exists. The entire area has been reconfigured to an open bay office environment. The office space now spans the entire 50 feet of the ring allowing natural light to pour in from both sides through new energy-efficient windows. The open bay environment also gives agencies more contiguous space, enhances the flexibility of furniture configurations, improves air flow, and most importantly, allows each of the services to consolidate personnel more efficiently.

Individual office space is defined by "spinewalls" that carry electrical conduits and new telecommunication lines,



Looking up: During a recent tour of Wedge 1, Honorable Robert Pirie, Acting Secretary of the Navy (center), turns his glance skyward through skylights in a new cafeteria in Wedge 1. Dave Westrick, Wedge 1 Project Manager (left), and Stacie Condrell, Tenant Activities Group Leader, escorted Mr. Pirie through the wedge.

including fiber optics, to every work station at the "belt-line" level rather than at the floor, making desk connections much quicker and simpler.

"It is extremely rewarding to arrive at this point where we can begin moving people back into the wedge," said Westrick. "The entire renovation team, including all of our Pentagon agency representatives, have been working toward this goal for more than three years now," he reflected.

In all, hundreds of personnel have worked and continue to work on designing, engineering, information management and telecommunications, planning, scheduling, contracting, security and commissioning. Other employees serve on teams dedicated to representing tenant interests, defining tenant requirements, executing moves, and overseeing furniture acquisition and installation. And then there are the thousands of contracted laborers, 450 on any given day, who perform the work inside the wedge that has included demolition, abatement of

hazardous materials, reconstruction, and installation of new utilities and telecommunication conduits. Before the first sledgehammer could be raised, however, swing space teams had to complete the monumental task of relocating the 5,000 personnel in the wedge to external office space to clear the way for construction.

"The Wedge 1 Team has faced many challenges and overcome many obstacles to get to this point," said Westrick. "We feel we have a product we can all be proud of, but it will be our customers that will have the final say. We are confident that the employees who move into Wedge 1 will be pleased with the results."

Move Schedule

Tenant moves into Wedge 1 will occur over the next several months and will be completed in October 2001. On average, between 100 and 200 personnel will be moved at a time. Close to 85 percent of personnel in Wedge 2 (the area serviced by Corridors 5 and 6) will relocate to Wedge 1 with the remaining percentage of employees coming from external swing space or elsewhere in the Pentagon. Wedge 1 will house approximately 4,400 employees when it is fully occupied. The Wedge 1 general contractor is AMEC Construction Management, Inc., of Bethesda, Md.

Editor's Note: In the next issue of The Renovator, we will talk with some of the first personnel to move into Wedge 1. We will also discuss many of the challenges the renovation of Wedge 1 presented to the Wedge 1 team and look at the coordination efforts of all the stakeholders.



Three years ago...

With sledgehammers in hand, nine Pentagon officials "swung" their support behind the Pentagon Renovation Program at a wall-bashing ceremony held Feb. 12, 1998.

The event observed the start of Wedge 1 construction, a major milestone in the Renovation Program as work began in the upper five floors of the Pentagon.



Wedge 1 as it appeared after demolition and abatement of hazardous materials. The entire 1,000,000 square-foot wedge was brought down to its bare structure. In all, 83 million pounds of debris were removed.



New insulation, windows, utilities, and electrical and telecommunication conduits were installed.

Wedge 1 Highlights

- 1,000,000 square feet of building space renovated
- 83 million lbs. of debris removed (70% recycled)
- 28 million lbs. of asbestos-contaminated material removed
- 8 new passenger elevators
- Escalator at apex traversing all five floors
- 1,282 energy-efficient window units
- 386 blast-resistant window units
- New energy management and control system
- New heating and cooling system
- Modern telecommunications infrastructure
- External historical features preserved



Swing Space Highlights

- 910,000 square feet (45 floors) renovated
- 7,000+ personnel moves accomplished
- New communications systems installed
- Connectivity with Pentagon maintained



Getting the best value

To ensure the government receives the best value, the Renovation Program worked with the research and development components of furniture manufacturers to develop extraordinarily capable furniture designs. The Program also will keep contractors in constant competition and use award fees to ensure contractor profits are based on performance. In addition, pre-existing free-standing furniture (file cabinets, tables, executive and conference room furniture) will be re-used where appropriate.

These measures have reduced by \$10 million the cost estimated to furnish each wedge for a potential total savings of up to \$40 million for Wedges 2 through 5.



Areas are then carpeted and office partitions, featuring "spine-wall" technology, and furniture were installed. Electrical and communication lines are pulled through the spine-wall to every work station to ready the space for employees.



New Remote Delivery Facility improves Pentagon security

Recently, on the roof of the Pentagon's new Remote Delivery Facility (RDF) near the Mall Terrace, Wendy Thompson, the project's manager for the Renovation Program, looked out over the 250,000-square-foot structure and reflected back to May 17, 1999, the day ground was broken for the project. "It's hard to believe that just 20 months ago, this was the site of a parking lot," said Thompson. In fact, on August 31, 2000, just 16 months after construction began, Phase 1 of the project opened, precisely on schedule. Trucks, vans and other delivery vehicles began rolling into the facility's completed loading dock area at 9 o'clock that morning. David "Doc" Cooke, Director, Administration and Management, and Lee Evey, Pentagon Renovation Program Manager, along with Thompson and a crowd of 200, participated in a ribbon-cutting ceremony to mark the event.

In her opening comments at the ceremony, Thompson stated that the aggressive schedule required an aggressive team. "We promised back then that we would open the loading dock on August 31, 2000. There were some cynics, but we assembled a highly professional and dedicated team. Our Pentagon customers, the contractors and the renovation staff have worked together closely to identify and solve problems early and ensure requirements were met," said Thompson. "The turnover of Phase 1 on cost and on schedule is a testament to the success of everyone's efforts."

"The timely completion of this facility is the direct result of the outstanding teamwork and dedication of the Remote Delivery Facility team," said Mr. Cooke later in the ceremony. "This is, indeed, a showplace facility," he added. Mr. Cooke was surprised a few moments later when Mr. Evey approached the podium and read a letter from former Secretary of Defense, William S. Cohen.

"The Remote Delivery Facility will contribute significantly to the security of the Pentagon," the letter said. "It was Doc's leadership and vision that made the construction a reality. I believe it is appropriate to recognize Doc's lifetime



David "Doc" Cooke (left), Director, Administration and Management, and Lee Evey, Pentagon Renovation Program Manager, cut the ribbon to mark the completion of Phase One of the delivery facility.

of extraordinary service to the Department of Defense and the United States Government by dedicating the facility to him. Therefore, I dedicate the structure as the David O. Cooke Delivery Facility."

"It's a tremendous honor," said Cooke following the announcement. "It is equally rewarding to have had a hand in helping to improve the security of the Pentagon and the 25,000 people that work here each day."

Indeed, security was the driving factor for construction of the RDF. According to John Jester, Chief of Defense Protective Service, the Oklahoma City bombing in 1995 focused attention on federal building security across the country. "Over the past several years, terrorist events here in the U. S. and around the world attest to the security lapses that can occur when vehicles are able to park below or adjacent to occupied buildings," said Jester. "The new facility significantly improves the physical security of the Pentagon by providing a secure, remote and consolidated location for receiving and screening the thousands of items shipped to the building each day."

Presently, the RDF's 30 truck bays accommodate a daily average of 230 vehicles and as of December 31, 2000, more than 19,000 vehicles had been cleared through the new loading dock. While the RDF was being constructed, all vehicles and materials coming into the Pentagon were cleared at a smaller warehouse off the Pentagon reservation. "In terms of capacity, the new delivery facility is a tremendous improvement over the warehouse, which had only four bays," said Sgt. Peter Digiulio, supervisory police sergeant for the RDF. "We no longer have trucks stacking up waiting to be cleared. Improving the flow of vehicles and materials improves security because vehicles that linger are always a concern."

Once a vehicle receives approval to enter the new loading dock area, a thorough security inspection begins. First, one of four canine teams sniffs for explosives that may be hidden around the vehicle. Security personnel then



Wendy Thompson, Remote Delivery Facility Project Manager, addressed the crowd at the ribbon-cutting ceremony.



Workers install a portion of the Remote Delivery Facility's blast-resistant walls.

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use mirrors to complete an under-carriage inspection. If cleared, the vehicle is then permitted to back up into a pre-assigned loading bay. Drivers without a building pass must walk through a metal detector before being permitted to open the vehicle's cargo door. The canine team is called on again, this time sniffing for explosives inside the vehicle. Upon passing this inspection, materials can be off-loaded and brought to a screening area where they are placed on pallet-sized conveyor belts and passed through X-ray equipment and are subject to other screening measures. "Every vehicle and all items must be inspected thoroughly," said Sgt. DiGiulio. "We make no exceptions." When the screening process is complete, materials are transported to the Pentagon through a connector tunnel and to their final destination inside the building.

First design-build contract

The RDF was the Pentagon Renovation Program's first design-build contract. "Design-build" means that one contractor is responsible for both design and construction of the facility. The project designer and the construction contractor submit a design and cost proposal as a team during the solicitation process, and then execute the work as a team after contract award. The Pentagon Renovation Program's contracts are structured such that a design-build team earns profits based only on its ability to earn award fees and incentive fees by exceeding pre-established performance standards and by performing work efficiently. In the case of the RDF, Hensel Phelps Construction (along with HDR Architecture, M.C. Dean, and Southland Industries), submitted the win-

ning proposal and has scored exceptionally high during performance reviews. "The design-build approach is a win-win situation," said Evey. "The contractors are motivated to find ways of doing things smarter, faster and within budget while maintaining a high level of quality and cooperation. That's good for our customers and good for the taxpayer."

When completed later this spring, the RDF will house approximately 150 employees and will include personnel from the Federal Facilities Division, Defense Protective Service, the Defense Post Office, Food Services, and other support service personnel. The roof of the new facility will be fully landscaped, making it suitable for ceremonial activities. In addition to material receiving and screening operations, the facility will house the Pentagon's maintenance shops, other light industrial operations as well as a new mission-critical power and chilled water plant.

Note: The RDF design-build team led by Hensel Phelps Construction Company was awarded a \$36.5 million contract in September 2000 for the new Pentagon Metro Entrance Facility (*story on next page*).



Canine explosive detection teams inspect most of the 230 vehicles that arrive at the Remote Delivery Facility each day.



Aerial view (December 2000) of the Pentagon's new Remote Delivery Facility, which provides a consolidated location for screening all materials and supplies that enter the Pentagon. The facility opened on schedule on August 11, 2000, just 16 months after construction began.

Construction begins on Metro Entrance Facility project

Coordination with disability representatives key to successful design process

On September 25, 2000, the Pentagon Renovation Program awarded Phase I of a \$36.5 million contract to Hensel Phelps Construction Co. of Chantilly, Va., for the design and construction of a new Pentagon Metro Entrance Facility (MEF). This project will implement Congressionally approved security enhancements to the existing facility as a part of the Pentagon Renovation Program. Key components of the project include relocating the existing bus facility farther from the building and constructing a new entrance facility to the Pentagon. The Pentagon Tour Office and the Pentagon Badge Office will be relocated to the new entrance facility upon its completion. Access into the Pentagon and mass transit operations will be maintained at all times during construction.



Members of the Metro Entrance Facility project team use a tape measure to clarify the dimensions of project design features at a recent meeting with disability representatives in Alexandria, Va.

The MEF contract is the direct result of coordinated efforts between the Pentagon, Washington Metropolitan Transit Authority, elected officials, state and local transportation agencies, the National Capital Planning Commission, and representatives from the community, including persons with disabilities. "The response has been excellent," said Will Colston, MEF Project Manager. The affected parties understand the need for this security initiative and have worked closely with us to design a new facility that meets the needs of the area's mass transit users and the security requirements of the Department of Defense.

The Pentagon Metro Station, the Washington area's largest bus-to-rail transfer point, has not undergone a major upgrade since it was completed in the mid 1970s. The new facility will include covered bus bays, and windscreens will enhance passenger comfort at bus waiting areas. Escalators and walkways, and two elevators at all vertical transition points will improve accessibility. "Our goal is to create a modern user-friendly facility that is accessible to all patrons," said Colston.



Lee Evey (left), Pentagon Renovation Program Manager, describes renovation activities to Congressman James Moran (Va.) during a recent site visit. A Congressional mandate requires the Pentagon Renovation Team to upgrade the security of the Pentagon's Metro Entrance. To meet this requirement, the Metro Bus Loop must be moved a minimum of 280-feet from the face of the building.



Will Colston, project manager for the Metro Entrance Facility, describes design features at a recent meeting with disability representatives.

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A preliminary conceptual rendering of the new Metro Entrance Facility. The project is driven by security initiatives and will include a new bus facility, covered walkways, windcreens, aesthetic improvements, full accessibility, and a new entrance facility into the Pentagon.

Other MEF upgrades include state-of-the-art security equipment and telecommunications, and improved lighting and aesthetics. Two additional bus bays will accommodate projected increases in ridership and a new Metro sales office will be built. The Metrorail station will not be affected by the project.

Design of the facility continues to be refined and initial site work began in February 2001 to relocate the existing taxi stand along Rotary Road. Completion of the entire project is expected in late 2002. The first changes to pedestrian traffic at the bus facility are not expected until November 2001.

The Pentagon Renovation Program will disseminate information regularly to keep facility users informed of construction progress and to communicate project impacts. For additional information on the Metro Entrance Facility project, please visit <http://metro.pentagon.mil>.



The existing bus facility at the Pentagon Metro allows vehicles to come within several feet of the building.



Recent threat assessments require the relocation of the existing Metro bus facility farther away from the Pentagon. Construction work began February 7, 2001.

Visit the Metro Entrance
Facility Web Site
<http://metro.pentagon.mil>



South Terrace Bridges improve access and safety

On September 18, 2000, Pentagon employees and visitors breathed a collective sigh of relief with the opening of Rotary Road in its final configuration, running underneath the two new pedestrian bridges along the Pentagon's South Terrace between the Pentagon and South Parking.

"The project required frequent lane change configurations, entrance closures and pedestrian detours," said Lou Couture, the South Terrace Project Manager for the Pentagon Renovation Program. "Pentagon personnel have been very patient throughout the entire construction process."

The South Terrace project includes two pedestrian bridges over Rotary Road, the renovation of the South Loading Dock, and new entrances to the second floor of the Pentagon at Corridors 2 and 3. The Corridor 2 Bridge opened in August of 1999. The east side of the loading dock was completed on January 5, 2000, and the Corridor 3 bridge was completed in early February 2001. "We now can see the vision of the designers and constructors realized," said Couture.

That "vision" was closely coordinated with the National Capital Planning Commission and other historical review agencies to ensure the integrity of the Pentagon's historical features was maintained. "The design of the structure as well as the materials used help to integrate the new bridges with the existing Pentagon facade," said Couture. In fact, the limestone that lines much of the bridge project was obtained from the same Indiana quarry that provided the Pentagon its



Workers smooth out a concrete sidewalk along a new "kiss-and-drop" area near the South Terrace Pedestrian Bridge at Corridor 2.

skin more than 58 years ago. "Our goal was to match the color and texture of the existing limestone so that the project looks like it's always been here," said Couture.

The attention to detail appears to have caught the eye of the design and construction industry. In January 2001, the Construction Management Association of America recognized the project as the "Project of the Year." "The recognition the project is receiving is a testament to the dedicated efforts of the entire South Terrace project team," said Couture.

The Pentagon Renovation Program, the Pentagon Building Management Office, the Defense Protective Service and other building representatives worked together from day one to ensure the success of the project. "Coordination was the key," said Couture. "It was critical to have all the stakeholders around the table often to identify issues of concern and solve problems before they impacted cost and schedule."

The main purpose of the South Terrace project is to ease traffic congestion along Rotary Road and to provide separation of vehicular traffic and pedestrians accessing the building.

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South Terrace Project Manager Lou Couture (left) and project engineer John Woodson inspect construction activity along the new bus stops between the Corridor 2 and 3 pedestrian bridges.

"It's always safer when you separate vehicles and pedestrians," said John Jester, Chief, Defense Protective Service. According to Jester, the project may also reduce the burden on his staff to maintain traffic flow along Rotary Road. "When both bridges become fully accessible, the need to have officers directing traffic may decrease," he said. "The smoother flow of traffic we expect when personnel use both bridges should also decrease congestion along Rotary Road during the morning and evening rush hours and that translates to fewer accidents," Jester added.

Both bridges contain two elevators and three stairways that allow pedestrians to cross safely over Rotary Road and either enter the building on the second floor or descend to the DoD bus stops along Rotary Road or to South Parking. Now that Rotary Road runs beneath both bridges, 100 regular and 24 handicap parking spaces in South Parking have been restored.

While the Corridor 3 bridge is now complete, the bridge will not open until the completion of Wedge 1 in the fall of 2001.



The South Terrace Pedestrian Bridges project was recognized recently as the "Outstanding Project of the Year" by the Construction Management Association of America, National Capital Chapter. The South Terrace project was designed by the firm of Hayes, Seay, Mattson & Mattson of Rossmore, Va., and was constructed by the William F. Walsh Construction Company of Rothgeb, Md.



View of the new South Terrace Pedestrian Bridges at Corridors 2 and 3. The bridges provide safe access to the Pentagon by separating vehicular traffic and pedestrians. New DoD bus shelters line the wall between the bridges. The bridge at Corridor 3 will open this fall to coincide with the completion of Wedge 1.

Healthy review for DiLorenzo TRICARE Health Clinic

This February, nearly one year after officials cut the ribbon for the Pentagon's new DiLorenzo TRICARE Health Clinic, *The Renovator* spoke with the facility's director of administration, Lt. Col. John Felicio, to conduct a post occupancy check up. "It's a beautiful facility that features state-of-the-art technology," said Felicio. "We're still going through some growing pains," he added, "but we are working closely with the Pentagon Renovation Program and the Pentagon Building Management Office to resolve outstanding issues related to the operation and maintenance of the facility."

The numbers of patients using the clinic belie the fact that the new facility provides only out-patient care and is not a small hospital. In fact, according to Felicio, in an average month during the first quarter of fiscal year 2001, the clinic handled 1,858 primary care visits, completed 150 minor surgery procedures, accommodated 940 physical therapy visits, 313 podiatry visits, 344 radiology visits, 427 optometry visits, 442 civilian occupational health visits, 599 allergy visits, conducted 4,110 lab tests, 229 physical exams, and filled 11,980 pharmacy prescriptions. "As you can imagine, we have an energetic and highly professional staff dedicated to providing the best care possible," said Felicio.

Yet despite the seemingly large number of patients taking advantage of the new clinic, Felicio wants to attract even more business. "We are still trying to optimize and increase



Pentagon personnel in the main reception area inside the DiLorenzo TRICARE Health Clinic.

active duty enrollment," he said. "We can handle most routine medical visits and we want to encourage Pentagon Active Duty personnel to take advantage of the convenience and optimum care offered by our staff. In addition, enrollment at the Arlington Annex Health Clinic, an extension of the DiLorenzo TRICARE Health Clinic, is also available."

The 50,000-square-foot clinic was built to consolidate the Army, Navy, Air Force and Civilian Occupational Health Clinics in the Pentagon. The clinic occupies the space below the River Terrace that previously housed the Pentagon's motor pool.

The new facility features tele-medicine and computer connectivity with physicians at Walter Reed Army Medical Center. Radiology features filmless technology—X-rays are digital providing physicians nearly instant feedback. In all, a variety of medical services to include an emergency reaction team, optometry, physical therapy, podiatry, cardiology, immunology, pharmacy and others are provided in the Clinic.

The DiLorenzo TRICARE Health Clinic is also co-located with the new Pentagon Tri-Service Dental Clinic which includes 30 chairs, compared to the 12 that existed previously in the Pentagon.



A staff member in the DiLorenzo TRICARE Health Clinic describes computerized inventory procedures to visiting personnel.

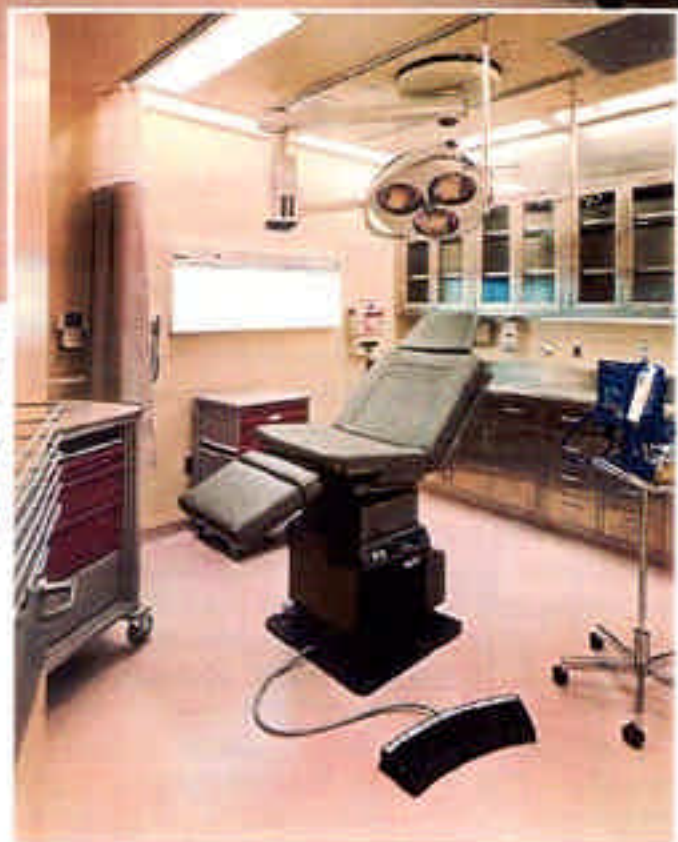


Pentagon medical personnel receive training inside the new clinic.

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Above and insets: Exam rooms inside the DiLorenzo TRICARE Health Clinic feature state-of-the-art technology, including digital radiology. Pentagon physicians no longer have to wait for x-rays to be developed. The filmless technology eliminates the discharge of mercury and silver contaminants associated with the X-ray process. Instead, digital images appear on computer monitors instantaneously and can be transmitted electronically in real time should the expertise of another physician outside the facility be required.



Left: The Pentagon motor pool below the River Terrace as it appeared in 1997 before its transformation into the DiLorenzo TRICARE Health Clinic began.

New Heliport Fire Station and Control Tower complete

Chief Campbell, the Fire Chief for the Fort Meyer Fire Department, has been looking forward to moving into the new Heliport Fire Station and Control Tower that was completed late in January 2001. "Everybody within the department is very excited about the upgrade in the facility," said Campbell.

The new Heliport Fire Station and Control Tower combines the fire station and control tower functions into a single modern facility. The old fire station was demolished in mid September. "In the old station, the firefighters did not have living quarters separate from the truck bay and in the winter it would get extremely cold inside every time we had to take the truck out," said Campbell. "It would then take hours to reheat the room."

The construction of the new 2,400-square-foot building progressed rapidly requiring only five months to complete the entire project. William Holley, the project's manager for the Pentagon Renovation Program, explained the improvements included in the larger facility. "The new building houses the new aircraft rescue fire fighting vehicle, separate living quarters for the fire fighters, and a new communications room," said Holley. The facility also includes restrooms that are compliant with the Americans with Disabilities Act. In addition, the building has a VIP lounge, modern telecommunications, and new heating, ventilation and air conditioning systems. The existing helipad lighting system has also been replaced.

"The new VIP waiting area is a great improvement over what we had in the old facility," said Staff Sergeant Yarbrow, an air traffic controller at the Pentagon Heliport. "The increase in size and utility of the fire station improves the fire department's ability to respond to an emergency."

According to Yarbrow, the amount of helicopter traffic experienced at the Pentagon Heliport varies greatly depending on the state of affairs in the Department of Defense. "We can have anywhere from 25 to 100 helicopters per week during a heightened state of awareness in the military," Yarbrow said. The Pentagon Heliport is a joint usage facility, fielding air traffic from all branches of military service and the National Guard.

The old 820-square-foot control tower was abated of hazardous materials and demolished after the new Heliport Fire Station and Control Tower became fully operational. The new structure received a stone aggregate cladding to more closely resemble the exterior of the Pentagon.



From top to bottom, the photo sequence at right shows the construction of the Heliport Fire Station and Control Tower. The new facility is now fully operational.

Firms compete for Wedges 2-5 contract

Renovate Wedges 2-5.

Prepare the unfinished Basement/Mezzanine for future occupation. Execute within budget and schedule. This is your mission, should you choose to accept it.

This was the challenge issued on April 19, 2000, when a Request for Qualifications went out to potential design-build teams to propose on the Pentagon's remaining four million square feet of unrenovated above-ground space. Seven teams answered the call and, after a thorough selection process, three teams remain. They are:

The Hensel Phelps team, consisting of Hensel Phelps Construction Co., Shalom Baranes Associates, HDR Architecture, MC Dean, Studio Architecture, and Southland Industries; Pentagon Design-Build, Inc., consisting of Clark Construction Co., Ai, Gilford Corp., and Flack and Kurtz; and Team One, consisting of Dick Corporation, Barton-Malow, and Leo A. Daly.

One of these three teams will have the daunting task of working around 20,000 people while removing approximately 400 million pounds of debris from the remaining four wedges, including 100 million pounds of hazardous material. After



Wedges 2 through 5 encompass four million square feet of space, equivalent to two Empire State Buildings.

providing temporary utilities to keep the existing areas of the Pentagon operational and completing the demolition and abatement process, the contractor will be responsible for the design and build-out of new tenant space. In addition to the installation of all new plumbing, electrical, heating and air conditioning systems, this will include the introduction of building elements such as new elevators and escalators and automated building controls. Energy efficient, thermal-insulated and blast resistant windows will be installed along with other security upgrades. The building will be brought up to code to be compliant with the Americans with Disabilities Act, and the permanent connector tunnel to the new Remote Delivery Facility will be constructed. In addition, the Defense Secre-

taries and command centers will need to be relocated while remaining operational at all times.

The size and complexity of the task at hand means that business as usual is not an option. The Pentagon Renovation Program is transforming the construction industry's approach to acquisition with its design-build contracting methods. One of the three teams listed earlier will receive a fixed price incentive-based contract with an award fee, evaluated on best value with the focus on past performance and technical and management approaches. This is contrary to the traditional acquisition approach, which is a fixed-price award, based on the lowest bid. Each team is given the Renovation Program's performance criteria that tell the contractor functional requirements and goals and allows them to determine the best approach to complete the job. This approach tends to maximize innovation and flexibility on the part of the contractor as opposed to prescriptive specifications that tell the contractor how the job must be done.

The Renovation Program's innovative acquisition approach has brought in several firms previously uninterested in federal construction work. Design, construction, and moves will be phased one wedge at a time using the design-build approach. It is anticipated that the design-build approach, with the award fee element, will foster a cooperative work environment between the contractor and client. This will produce a superior interactive planning process that introduces constructability into the design and leads to more realistic pricing, less changes and economical performance. All of this adds up to increased profit for the contractor, increased savings for the taxpayer and a higher-quality product.

Requests for proposals were released on January 15, 2001, and the contract award is scheduled for June 2001. Dependent upon the completion of Wedge 1, Wedge 2 should be vacated and ready for demolition and abatement just five months after contract award.



Members from one of three design-build teams competing for the Wedges 2 through 5 contract inspect design drawings in Wedge 1 during a recent tour of renovation activities.

cal, heating and air conditioning systems, this will include the introduction of building elements such as new elevators and escalators and automated building controls. Energy efficient, thermal-insulated and blast resistant windows will be installed along with other security upgrades. The building will be brought up to code to be compliant with the Americans with Disabilities Act, and the permanent connector tunnel to the new Remote Delivery Facility will be constructed. In addition, the Defense Secre-

Information management and telecommunications upgrades connect Pentagon to the 21st Century

Separate but related to the Pentagon Renovation Program is a necessary modernization of the building's information management and telecommunications infrastructure and systems. "The basic information system infrastructure in the Pentagon was installed long before the advent of personal computers, facsimile machines, video teleconferencing, and digital telephone service, and has evolved without a design plan," said Col. Robert Kirsch, Information Management and Telecommunications (IM&T) Project Manager for the Pentagon Renovation Program. "In 1943, when the Pentagon was built, there was one telephone for every three employees, but over the last 58 years, new information technology capabilities have emerged and the new systems have been laid on top of the old." According to Kirsch, over time, this merging of technology has become unmanageable and not easily upgraded. "As requirements emerged, facilities and systems were added with little or no regard to existing capabilities or long-term requirements," he said. "The individual military departments and agencies simply engineered and installed equipment and cables to meet their immediate specific needs."

The objective of the IM&T effort is to provide cost-effective services and capabilities that will best serve the needs of the Pentagon tenants and Department of Defense senior leadership by leveraging technology advancements and designing and developing integrated systems. The information technology modernization is being accomplished in conjunction with the building's wedge-by-wedge renovation.

Today, the 20,000 personnel in the Pentagon and the 5,000 more in swing space are largely "Information Age" workers with at least one telephone and desktop computer system per person. They require state-of-the-art systems that will provide immediate access to local as well as world-wide networks and the tools to rapidly collect data, analyze it, and present it to decision makers in a timely manner. This requirement defines the objectives of the IM&T Project:

- Provide modern telecommunications and information management services throughout the Pentagon with access to global networks. The communications network will support voice, data, and video at varying security levels.

- Relocate all command and operations centers to renovated facilities. These include the Air Force Operations Group, Navy Command Center, Marine Corps Command Center, National Military Command Center, and the Army Operations Center.

- Modernize and consolidate the functions and responsibilities of the seven technical control facilities in a single Pentagon Consolidated Technical Control Facility.

- Relocate the Defense Information Systems Agency, Joint Staff Support Center, Command and Control Automated Data Processing Centers from existing facilities into one new facility located in renovated space.

- Three to four consolidated server facilities will be built in each wedge. These server facilities will allow the many server requirements of all services and agencies to be consolidated into these 18 common facilities without the need to build hundreds of special purpose facilities throughout the building.

- Provide the renovated Pentagon with improved voice communications currently provided by 22 Command and Control, Tactical, and Administrative telephone switches located in 12 different facilities. Reduce the number of telephone switches in the Pentagon from 22 to 8.

- Replace the 130 radio systems distributed throughout the building with one Consolidated Radio Room in each wedge.

In 2000, the Renovation Program's IM&T team completed the Outside Plant Infrastructure, which for the first time in 58 years provides the Pentagon with assured continuity of operations for its telephone and data cables and the services they carry in the case of a catastrophic event. The first part of the year included the Y2K rollover date which, due to the dedicated efforts of the entire IM&T team, transpired without any disruptions of service or negative impacts



Col. Robert Kirsch (right), IM&T Project Manager for the Renovation Program, describes telecommunication upgrades to Army personnel during a tour in Wedge 1.



Telecommunications technicians install new fiber optic cables and copper telephone lines in Wedge 1. 16,000 miles of new copper lines will replace the 75,000 miles of old copper lines existing in the Pentagon.

Pentagon Renovation activities spark media interest

The increased visibility of Pentagon renovation activities both inside and around the Pentagon resulted in significant and overwhelmingly positive media coverage during 2000.

Renovation activities have been featured in a one-hour program on the Discovery Channel, a 12-minute segment on CBS 60 Minutes II, The Learning Channel, CNN Science and Technology Week, ABC Morning News, Fox News, and in several local news broadcasts.

While most of the media attention has focused on the magnitude and complexity of renovating our Nation's military headquarters, reporters increasingly have been interested in the way the Renovation Program conducts business. In fact, several trade publications, including the Engineering News Record, Energy & Environmental Management, and Building Operation Management, were particularly interested in the innovative procurement practices the Renovation Program employs, especially its move to design-build contracts.

Media note: A one-hour program about the Pentagon and the renovation effort is scheduled to air on the History Channel's "Modern Marvels" series at 10:00 P.M. on Monday, Feb. 26, 2001.



CBS 60 Minutes II reporter David Martin (center left) interviewed Pentagon Renovation Program Manager Lee Evey inside Wedge 1. A 12-minute segment about the Renovation Program aired in March 2000.



Barbara Starr with ABC News interviewed Lee Evey, Pentagon Renovation Program Manager, on the Wedge 1 site.



Lee Evey, Pentagon Renovation Program Manager (far right), is interviewed in his office by a producer with the History Channel. A one-hour special about the Pentagon is expected to air Feb. 26, 2001.

The Washington Post

The Billion-Dollar Makeover

Design: Pentagon Unleashing a \$1.2-Bn. Top-to-Bottom Overhaul

The Pentagon is undergoing a \$1.2-billion renovation project that will transform the building into a modern, efficient, and secure headquarters for the U.S. Department of Defense. The project, which is the largest in the history of the Pentagon, is being managed by the Pentagon Renovation Program. The program is responsible for the design, construction, and operation of the renovation project. The project is being completed in three phases. The first phase, which is currently underway, involves the renovation of the main building. The second phase involves the renovation of the underground parking garage. The third phase involves the renovation of the Pentagon's air conditioning system.

Pentagon renovation activities have caught the attention of local and national newspapers, magazines and trade journals, including the Washington Post, USA Today and the Engineering News Record. Reporters increasingly have become interested not only in the renovation project itself, but also in the innovative ways it is being accomplished.

Japanese Pi

PENTAGON PUMPS UP PERFORMANCE

The Pentagon is undergoing a \$1.2-billion renovation project that will transform the building into a modern, efficient, and secure headquarters for the U.S. Department of Defense. The project, which is the largest in the history of the Pentagon, is being managed by the Pentagon Renovation Program. The program is responsible for the design, construction, and operation of the renovation project. The project is being completed in three phases. The first phase, which is currently underway, involves the renovation of the main building. The second phase involves the renovation of the underground parking garage. The third phase involves the renovation of the Pentagon's air conditioning system.



Marian Bailey, "Miss Pentagon" dies after 59 years of service in the Pentagon



Marian Bailey posed for a snapshot during her early years in the Pentagon.

Marian Bailey, 79, who began her career with the Pentagon when it opened in April of 1942 and remained on staff for nearly 60 years, died Jan. 22 at her home in Riverdale, Md., after a heart attack. She was said to have been the last of the Pentagon's original staff continuing to serve. The duration of her career combined with her knowledge and affection of the building earned her the title of "Miss Pentagon."

"The Pentagon is like family to me," Ms. Bailey said in an interview early last year. "It is a part of me and will always occupy a soft spot in my heart."

In recent years, Ms. Bailey's duties have consisted primarily of escorting VIPs on tours through the Pentagon. She was seen frequently on her own personalized golf cart equipped with flags, lights, three horns and two car batteries. "I've invested \$5,000 in my baby," boasted Ms. Bailey. "I accommodate many important people and I can't afford a breakdown."

Ms. Bailey began her career as a switchboard operator and eventually moved up the ranks to be the chief telephone operator. "I was in charge of more than 300 gals," she said. "They were the most dedicated people you could hope to work with." One particular event involving her team stood out in Ms. Bailey's mind. "Dur-

ing the war [WWII], the full-time operation of the switchboard was critical," she said. "I and a group of my girls slept in the Pentagon for two weeks straight to keep the switchboard running smoothly. I'm not sure you'll find that kind of dedication today."

Ms. Bailey also never hesitated to voice her opinion about modern technology. "When we ran the switchboard, anyone calling the Pentagon always found a pleasant voice on the other end of the line," she said proudly. "Today, you get recorded voices and beeps. That's not my idea of progress."

Despite her disapproval of some of the changes she had seen take place over the last 59 years, Ms. Bailey's pride in the Pentagon never wavered. "The Pentagon is a special place," she said. "Always has been, always will be."



Marian Bailey, center, was seen quite frequently surrounded by some of the many friends she made during her 59 years of service in the Pentagon.

Pentagon celebrated 58th Anniversary in January 2001

On January 15, 1943, the last of 15,000 construction workers and more than 400 architects and engineers left the grounds of the Pentagon reservation as the 34-acre home to our Nation's military establishment was completed. No dedication ceremony was held due to the pressures of wartime.

In actuality, the first personnel began occupying the Pentagon in April of 1942, just eight months after construction began.

In the fall of 1942, the Secretary of Defense moved into his office along the River Terrace and by December 1942, 22,000 employees occupied the Pentagon.

The final cost for the Pentagon was \$49.6 million for the structure and \$33.4 million for ancillary facilities and 30 miles of roads, access ramps and bridges.



The Pentagon was constructed in just 16 months, from September 1941 to January 1943, as 15,000 workers labored in three shifts around the clock. The structure is constructed almost entirely of reinforced concrete as steel was preserved for the war effort.



Pentagon Renovation Program

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For additional information about the
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